



Genetics of climate change adaptation

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Abstract:

The rapid rate of current global climate change is having strong effects on many species and, at least in some cases, is driving evolution, particularly when changes in conditions alter patterns of selection. Climate change thus provides an opportunity for the study of the genetic basis of adaptation. Such studies include a variety of observational and experimental approaches, such as sampling across clines, artificial evolution experiments, and resurrection studies. These approaches can be combined with a number of techniques in genetics and genomics, including association and mapping analyses, genome scans, and transcription profiling. Recent research has revealed a number of candidate genes potentially involved in climate change adaptation and has also illustrated that genetic regulatory networks and epigenetic effects may be particularly relevant for evolution driven by climate change. Although genetic and genomic data are rapidly accumulating, we still have much to learn about the genetic architecture of climate change adaptation.

Source: <http://dx.doi.org/10.1146/annurev-genet-110711-155511>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Ecosystem Changes, Extreme Weather Event, Temperature, Unspecified Exposure

Extreme Weather Event: Drought

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Climate Change and Human Health Literature Portal

Other Health Impact

Other Health Impact: Genetic Effects

Resource Type: 

format or standard characteristic of resource

Review

Resilience: 

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale: 

time period studied

Time Scale Unspecified